

CLAIMS

1. A supplementary vascular clamp for the tool kit of an open approach stapler for occlusion of a blood vessel around this open approach stapler at the moment of its operation comprising:
 - a) a pair of rotatable levers each of them having a proximal end and a distal handle end, each rotatable lever contains clamping jaws rigidly attached to a corresponding proximal end of this lever and shaped as a concave semi-cylindrical cavity, the clamping jaws being movable between open position and closed position and defining in closed position a through cylindrical cavity;
 - b) a tightening means for providing intra-aortal bending of staple ends of the open approach stapler and secure enclosure of aorta walls by the clamping jaws;
 - c) fastener means for attaching the tightening means to a corresponding clamping jaw;
 - d) a compensating means for correcting irregularity in thickness of the aorta walls,whereby there are provided intra-aortal bending of staple ends of the open approach stapler, secure enclosure of aorta walls by the clamping jaws, as well as correction of irregularity in thickness of the aorta walls.

2. A supplementary vascular clamp according to claim 1, wherein said rotatable levers intersect and are connected at their intersection point, the rotatable levers containing fixing grips near their distal handle ends.
3. A supplementary vascular clamp according to claim 1, wherein said rotatable levers intersect and are connected via a pivot pin near their proximal ends.
4. A supplementary vascular clamp according to claim 1, wherein each said clamping jaw is shaped as a concave semi-cylindrical cavity, having a concave inner surface and bent outer surface, substantially parallel with its inner surface.
5. A supplementary vascular clamp according to claim 1, wherein the clamping jaws are adapted to be rigidly attached to the proximal ends of said rotatable levers of conventional vascular clamps.

6. A supplementary vascular clamp according to claim 1, wherein said tightening means for providing intra-aortal bending of staple ends of the open approach stapler and secure enclosure of aorta walls by clamping jaws contains at least two plates of resilient material, substantially rubber or plastic, each plate being attached to the inner semi-cylindrical surface of a corresponding clamping jaw.
7. A supplementary vascular clamp according to claim 1, wherein said tightening means for providing intra-aortal bending of staple ends of the open approach stapler and secure enclosure of aorta walls by the clamping jaws contains at least one strip from resilient material, substantially rubber or plastic, which is attached by each of its ends to the inner semi-cylindrical surface of a corresponding clamping jaw.
8. A supplementary vascular clamp according to claim 7, wherein said tightening means for providing intra-aortal bending of staple ends of the open approach stapler and secure enclosure of aorta walls by the clamping jaws, containing at least one strip from resilient material, substantially rubber or plastic, is configured to adjust the force of occlusion of a blood vessel outer surface.

9. A supplementary vascular clamp according to claim 8, wherein said tightening means for providing intra-aortal bending of staple ends of the open approach stapler and secure enclosure of aorta walls by the clamping jaws containing at least one strip from resilient material, substantially plastic, is configured to adjust the force of occlusion of a blood vessel outer surface via a mechanism for tensioning said strip.
10. A supplementary vascular clamp according to claim 1, wherein said compensating means for correcting irregularity in thickness of aorta walls substantially contains a ridge at the free end of one of the clamping jaws and a valley opposite to this ridge at a corresponding free end of the other clamping jaw.
11. A supplementary vascular clamp for the tool kit of an open approach stapler for occlusion of a blood vessel around this open approach stapler at the moment of its operation, comprising:
- a) a pair of rotatable levers, each of them having a proximal end and a distal handle end, each rotatable lever contains a clamping jaw rigidly attached to a corresponding proximal end of this lever and shaped as a concave semi-oval cavity, said clamping jaws being movable between open position and closed position and defining in closed position a through oval cavity;

- b) a compensating means for correcting irregularity in thickness of aorta walls,
- c) a first tightening means for providing secure enclosure of aorta walls by the clamping jaws;
- d) a second tightening means for providing secure enclosure of aorta walls by the clamping jaws;
- e) a means for providing regular ejection of staples over the whole inner surface of said clamping jaws,

whereby there are provided a regular intra-aortal bending of staple ends of the open approach stapler, secure enclosure of aorta walls by the clamping jaws, as well as correction of irregularity in thickness of aorta walls.

12. A supplementary vascular clamp according to claim 11, wherein said rotatable levers intersect and are connected via a pivot pin at their intersection point, said rotatable levers containing fixing grips near their distal handle ends.

13. A supplementary vascular clamp according to claim 11, wherein said rotatable levers intersect and are connected via a pivot pin near their proximal ends.

14. A supplementary vascular clamp according to claim 11, wherein each said clamping jaw is shaped as concave semi-oval cavity having a concave inner surface and a bent outer surface.
15. A supplementary vascular clamp according to claim 11, wherein the clamping jaws are adapted to be rigidly attached to the proximal ends of said rotatable levers of conventional vascular clamps.
16. A supplementary vascular clamp according to claim 11, wherein said compensating means for correcting the irregularity in thickness of aorta walls contains clamping jaws with concave semi-oval inner surfaces movable between open position and closed position, said clamping jaws defining in closed position a through oval cavity with the long axis of symmetry coinciding with the parting plane of these clamping jaws.
17. A supplementary vascular clamp according to claim 11, wherein said first tightening means for providing secure enclosure of aorta walls contains clamping jaws shaped as concave semi-oval cavities overlapping one another by their ends in such a way, that the ends of one of the clamping jaws are female, and the ends of the other clamping jaws – male.

18. A supplementary vascular clamp according to claim 7, wherein said second tightening means for providing secure enclosure of aorta walls contains clamping jaws shaped as concave semi-oval cavities the ends whereof facing one another are flexible.
19. A supplementary vascular clamp according to claim 18, wherein said means for providing regular ejection of staples over the whole inner surface of the prosthesis connection with the aorta contains clamping jaws shaped as concave semi-oval cavities, the ends whereof facing and overlapping one another are disposed with a clearance between them.
20. A supplementary vascular clamp according to claim 19, wherein said means for providing regular ejection of staples over the whole inner surface of the prosthesis connection with the aorta contains clamping jaws shaped as concave semi-oval cavities, the ends whereof facing and overlapping one another are disposed with a clearance of 0,3 mm between them.